

Application Number 10/507,273
Amendment dated March 29, 2006
Response to Office Action mailed December 29, 2005

Remarks/Arguments

The Objection to the Specification

The Abstract of the disclosure was objected to because it was said that the cover sheet for the document WO/03/090245 was submitted instead of the required abstract.

According to 35 USC §371(c)(2) a copy of the international application as filed is not required, as the application was filed in the United States Receiving Office. Applicant respectfully draws Examiner's attention to the fact that the present application was filed in the United States Receiving Office on September 3, 2004. Therefore the Applicant requests withdrawal of this objection.

The Claims Rejection Under 35 USC §102(e)

Claims 1-26 stand rejected under 35 USC §102 (e), Examiner asserting that the present invention is anticipated by Tavkhelidze et al. (US Pat. No. 6,869,855). The Applicant requests reconsideration and withdrawal of this objection and respectfully draws the Examiner's attention to the priority date for the present invention, which is 06 March 2002. However, US Patent No. 6,869,855 to which the Examiner referred was published on the later date of 22 March 2005. Thus the invention in the Tavkhelidze disclosure was not made before the invention in the present application.

It appears that Examiner has not considered the Preliminary Amendment to the present invention filed by the Applicant on 03 September 2004. The Preliminary Amendment contains the following paragraph and requested for it to be added to the present Specification before line 3:

This application is the U.S. national stage application of International Application PCT/US03/07015, filed March 6, 2003, which international application was published on October 30, 2003, as International Publication WO03090245 in the English language. The International Application claims the benefit of U.S. Provisional Application No. 60/362,494, filed March 6, 2002, and U.S. Provisional Application No. 60/373,508, filed April 17, 2002. The International Application is related to co-pending U.S. Patent Application No. 10/234,498, filed 3 September 2002, which claims the benefit of U.S. Provisional Application No. 60/316,918, filed

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2 September 2001. The above-mentioned patent applications are assigned to the assignee of the present application and are herein incorporated in their entirety by reference.

Applicant maintains that the rejection of Claims 1-11 and 13-26 under 35 USC §102(e) is improper and should be withdrawn.

The Claims Rejection Under 35 USC §103 (a)

The Claims 1-26 stand rejected under 35 USC §103 (a). In the following paragraphs, Applicant will respond to each rejection individually to demonstrate that the present invention is not obvious.

Combination of the Inventions of Nishioka et al. and Fitzpatrick et al. In the Manner Suggested Includes a Previously Unimplemented Modification Untaught in Prior Art And One Which Contains Unobvious Advantages

Claims 1-2, 4-5,8-12 stand rejected under 35 USC §103 (a), Examiner asserting that the preset invention is unpatentable over Fitzpatrick et al. ("Close-Spaced Thermionic Converters with Active Spacing Control and Heat-Pipe Isothermal Emitters") in view of Nishioka et al. (US Patent No. 4,880,975). Fitzpatrick et al. teaches wherein a three piezoelectric translator is used for active gap control between closely spaced electrodes and Nishioka et al. teaches wherein a piezoelectric cylinder has a pair of electrodes attached to control the tunneling current between a probe and a sample in a scanning electron microscope. Examiner asserts that it would be obvious to modify Fitzpatrick's invention to have a piezoelectric tubular housing with electrodes on its inner and outer surfaces as disclosed by Nishioka. However, the present invention discloses a new principle of operation that has hitherto not been taught in the art whereby a housing means also comprises a means for adjusting the distance separating the electrodes. Claims 1 – 4 have been amended to make this distinction over the prior art clearer. This new physical structure disclosed by the present invention affords additional advantages, namely: (page 2, lines 27-9)

"a tubular actuating element serves as a mechanical connector between electrodes, as an element that regulates the distance between the electrodes, and as vacuum sealing tube."

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The suggested modification to be made to Fitzpatrick's invention to combine the above references has not been taught in prior art, even though the use of piezoelectric elements were prior art to both Nishioka and Fitzpatrick. Prior-art references do not contain any suggestion of combining the references using the modification suggested. It is the Applicant's opinion that if the present invention were, in fact, obvious, those skilled in the art would have implemented it by now. Additionally, both Fitzpatrick's and Nishioka's inventions are complete and functional in themselves; therefore there would be no reason to use parts from other references or to make the modifications recommended above.

The fact that those skilled in the art have not implemented and the fact that a modification is required to the combined references, which discloses a new principle of operation, indicates that the present invention is not obvious. Thus, the Applicant requests withdrawal of the rejection of Claim 1 and Claims 2, 4-5, 8-12, which are dependent upon Claim 1.

In Light of the Above Request Claim 3 Does Not Support a *prima facie* Obviousness as it Discloses Material for Use in an Unobvious Invention

Examiner rejected Claim 3 as being unpatentable over Fitzpatrick et al. ("Close-Spaced Thermionic Converters with Active Spacing Control and Heat-Pipe Isothermal Emitters") and Nishioka et al. (US Pat. No. 4,880,975) in view of Johnston (US Pat. No. 3,600,933). Examiner proposed that although Fitzpatrick and Nishioka teach the invention of Claim 2, they fail to teach wherein a tubular piezoelectric actuator is quartz. This point is taught by Johnston thus Examiner proposes that it would be obvious to one of ordinary skill in the art at the time the invention was made to choose from one of the materials disclosed by Johnston for the tubular piezoelectric actuator, since it has been held to be within the general skill of the worker in the art to select a known material on the basis of its suitability for intended use. Examiner directed the Applicant to the rule MPEP §2144.07. Applicant respectfully draws the Examiner's attention to the above paragraphs in which, via demonstrating the unobviousness of Claim 1 of the present invention, Applicant thereby established the unobviousness of Claim 2. Claim 3 of the present invention discloses quartz to be of possible use in the piezoelectric actuator *of the present invention*. Thus, possible use of quartz for the present invention solves a different problem than possible use of

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quartz for a prior art piezoelectric actuator as disclosed by Johnston by virtue of the fact that the present invention has been demonstrated to be unobvious. Furthermore, in light of the amendments to Claims 1 disclosed above, said piezo-electric actuating element may or may not be tubular when referred to in Claim 3 of the present invention; therefore its content is even further removed from the suggestions of Johnston. Applicant maintains that Claim 3 does not disclose a *prima facie* obviousness and requests withdrawal of its rejection.

The Claims Rejection Under 35 USC §103 (a)

Claims 6-7, 13-26 stand rejected under 35 USC §103 (a) Examiner asserting that the present invention is obvious over Fitzpatrick et al. ("Close-Spaced Thermionic Converters with Active Spacing Control and Heat-Pipe Isothermal Emitters") and Nishioka et al. (US Pat. No. 4,880,975) in view of Tavkhelidze et al. (US Pat. No. 6,869,855). The Applicant requests reconsideration and withdrawal of this objection and respectfully draws the Examiner's attention to the comments disclosed above, (see "The Objection to the Claims Rejection Under 35 USC §102(e)"). There Applicant demonstrates that the invention in the Tavkhelidze disclosure was not made before the invention in the present application and can therefore not qualify as prior art. Any rejection of the Claims in view of Tavkhelidze is therefore improper.

Applicant respectfully submits that this application, as amended, is in condition for allowance, and such disposition is earnestly solicited. No new material has been entered by these amendments. If the Examiner believes that discussing the application the Applicant over the telephone might advance prosecution, Applicant would welcome the opportunity to do so.

Respectfully submitted,



Avto TAVKHELIDZE
Inventor